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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/556,650	12/26/2006	Rex D. Ramsier	089498.0445.US	6590
39905	7590	06/09/2009		
ROETZEL AND ANDRESS 222 SOUTH MAIN STREET AKRON, OH 44308			EXAMINER LARKIN, DANIEL SEAN	
			ART UNIT 2856	PAPER NUMBER
			MAIL DATE 06/09/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/556,650	Applicant(s) RAMSIER ET AL.	
	Examiner DANIEL S. LARKIN	Art Unit 2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,7,8,18 and 19 is/are rejected.
- 7) ☒ Claim(s) 2, 6, and 9-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 1-19 are objected to because of the following informalities:

Re claim 1, claim line 14: The term -- that -- should be inserted after the term “material”.

Re claim 9, claim lines 4 and 6: The “commas” should be replaced by -- semicolons --.

Re claim 9, claim line 13: The term -- that -- should be inserted after the term “material”.

Re claim 18, claim line 11: The term -- that -- should be inserted after the term “material”. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3-5, 7, 8, 18, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by US 2002/018856 (Kunimoto et al.).

With respect to the limitations of claims 1, 3-5, 18, and 19, Kunimoto et al. disclose a gas sensing and oxygen pumping device and method of making device, comprising: a first electrically conductive material layer (10), such as platinum,

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palladium, and ruthenium; an electrically nonconductive material layer (2), such as zirconia, disposed on the first electrically conductive material layer (10); a second electrically conductive material layer (8), such as iridium, gold, and rhodium, disposed on the electrically nonconductive material layer (2); an inlet (3) for providing a gas source in fluid communication with the second electrically conductive material layer (8); and a power source (25) in electrical communication with the first and second electrically conductive material layers (,), wherein the first electrically conductive material layer is formed from an electrically conductive material that is non-catalytic for the gas to be detected, paragraph [0047], lines 3-5, and wherein the second electrically conductive material layer is formed from an electrically conductive material that is selectively catalytic for the gas to be detected, paragraph [0047], lines 1-3.

With respect to the limitation of claim 7, Kunimoto et al. disclose that the power source may be a battery, paragraph [0065], lines 9-10.

With respect to the limitation of claim 8, Kunimoto et al. disclose that the power source comprise a voltage applying means that has an alternating voltage, paragraph [0091], line 9.

Allowable Subject Matter

4. The following is a statement of reasons for the indication of allowable subject matter:

Prior art was not relied upon to reject claims and 9-17 because the prior art fails to teach and/or make obvious the following:

Claim 2: Providing a gas sensor having an electrically conductive layer that is non-catalytic to the gas to be detected, whereby the electrically conductive layer is a metal selected from the group listed in combination with all of the remaining limitations of the claim 1.

Claim 6: Providing a gas sensor for sensing sulfur dioxide having the structure recited in claim 1 in combination with all of the remaining limitations of the claim 1.

Claims 9-17: Providing a method of determining the presence of a gas utilizing a tunnel junction device having the specific structure recited.

Response to Arguments

5. Applicants' arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL S. LARKIN whose telephone number is (571)272-2198. The examiner can normally be reached on 8:30 AM - 5:00 PM Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel S. Larkin/

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Primary Examiner, Art Unit 2856
07 June 2009